

CLAIMS

We claim,

1. A system for controlling the stowage of display assembly of an on-board entertainment system, comprising:
an actuator for intended movement of said display assembly;
a clutch mechanically coupled to said actuator; and
a sensor for sensing relative position of said display assembly; and
logic coupled to said actuator and sensor; wherein upon movement of a deployed display assembly beyond a predetermined limit, the sensor provides a signal to said logic means which in turn activates said activator to retract said display assembly.
2. The system of Claim 1, wherein the clutch is comprised of an outer element having an integrated stop, an inner element having a region for engaging said stop, and biasing means for providing resistance of movement of the clutch outer element.
3. The system of Claim 2, wherein the biasing means is a spiral torsion spring.
4. The system of Claim 2, wherein the biasing means is a plurality of electronic capacitors.
5. The system of Claim 1, wherein the actuator device is an electric motor.

6. The system of Claim 1, further comprising an indicator plate affixed to said clutch outer element.

7. The system of Claim 1, wherein the sensor is an optical sensor.

8. The system of Claim 1, wherein the sensor is a mechanical device.

9. A retractor assembly for controlling the movement of a display assembly of an on-board entertainment system, comprising:
an actuator rigidly affixed to a vehicle having an on-board entertainment system;
a clutch assembly mechanically coupled to said actuator and to the display;
an indicator plate affixed to said clutch assembly;
a sensor for sensing relative position of said indicator plate; and
logic coupled to said actuator and sensor;

wherein upon the movement of the indicator plate beyond a predetermined limit, the sensor provides a signal to said logic means which in turn activates said actuator to retract said display assembly.

10. The system of Claim 9, wherein the clutch is comprised of an outer element having an integrated stop, an inner element having a region for engaging said stop, and a biasing means, within the outer element and inner element for providing resistance of movement of the clutch outer element.

11. The system of Claim 10, wherein the biasing means is a spiral torsion spring.

12. The system of Claim 9, wherein the actuator device is an electric motor.

13. The system of Claim 9, further comprising an indicator plate affixed to said clutch outer element.

14. The system of Claim 9, wherein the sensor is an optical sensor.

15. The system of Claim 9, wherein the sensor is a mechanical device.

16. A method for controlling the movement of an on-board entertainment system display assembly having a retractor motor, clutch assembly, and movement sensor, comprising the steps of:

activating the retractor motor in a first direction in response to a deploy command from the on-board entertainment system;

monitoring, via the sensor, the relationship of various components of the clutch assembly, representative of an unintended force contacting the display assembly; and

activating the retractor motor in a second direction, in order to store the display assembly.

17. The method of Claim 16 wherein the monitoring is performed only during deployment of the display assembly.

18. The method of Claim 16 wherein the monitoring is performed on a deployed display assembly in addition to during deployment of the display assembly.